Critical Care Medicine
December 2025 • Volume 53 • Number 12 • Pages e2734–e2746

SPECIAL ARTICLE

Society of Critical Care Medicine Clinical Practice Guidelines on Adult End-of-Life Care in the ICU

KEYWORDS: end-of-life care; end-of-life decision-making; evidence-based practice; intensive care unit; symptom management

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RATIONALE

Evidence-based practice has evolved significantly since the release of the 2008 American College of Critical Care Medicine (ACCM) Consensus Statement of recommendations for end-of-life (EOL) care in the ICU. These guidelines represent new knowledge and address previously unconsidered issues.

OBJECTIVES

To identify and disseminate evidence-based recommendations based on current research to better understand how to deliver appropriate and effective adult EOL care in the ICU.

INTRODUCTION

A multidisciplinary team approach to EOL care in the ICU is crucial regardless of age. Up to 20% of ICU patients have goals that are not medically attainable or their treatment plan does not align with their achievable goals (1, 2). Thus, it is paramount that we better understand how to assist with decision-making, mitigate conflict about treatment goals, address suffering, and enhance capacity for adult EOL care in the ICU. This includes detailed knowledge of how EOL care fits into the delivery of high-quality ICU care as well as into such processes as organ donation. Further discussion of organ donation is beyond the scope of this guideline. We refer you to your health system policies and local state laws for further information regarding discussion of organ donation. Recognizing that terminology may vary between regions, we provide a **supplementary glossary** (https://links. lww.com/CCM/H792) of terms commonly used in EOL care.

METHODOLOGY

Detailed methods can be found in the **Supplementary Materials** (https://links.lww.com/CCM/H791).

PANEL SELECTION

A call for interested panel members was submitted to the Society of Critical Care Medicine (SCCM) membership and through the SCCM Ethics Committee membership in 2021. Selection criteria included: diversity of professional

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DOI: 10.1097/CCM.0000000000006856

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expertise in clinical care and/or research in topic areas associated with EOL care in the ICU and/or ethics; diversity of practice environment to include urban, suburban, and rural healthcare system representation; diversity of stage in career to include early-, mid-, and advanced-career clinicians; diversity in personal demographics; and representation of patient/family perspectives with the intent that our panel represent the diverse communities to which our adult ICU patients belong.

QUESTION SELECTION AND OUTCOME PRIORITIZATION

The membership of the 2020–2021 SCCM Ethics Committee developed an initial list of guideline questions. Working with the methodologists, the panel chairs and co-chairs then edited this list and structured it in Population, Intervention, Comparison, and Outcome (PICO) format. The PICO questions were organized into three domains: improving communication about EOL care in the ICU, improving provision of EOL care/symptom management for patients in the ICU, and addressing the educational needs of clinicians, patients, families and surrogate decision-makers in ICU EOL care. This proposed list was circulated to the guideline panel, and in a series of teleconferences, including all panelists, the questions were modified and refined into a final list of ten PICO questions. Based upon clinical interest and expertise, the chairs assigned panelists to PICO question working groups. Following GRADE (a structured framework for evaluating and grading the quality of evidence) guidance, each working group, led by one of the chairs or co-chairs, refined a list of outcomes for each PICO question, which were categorized according to their importance for decision-making as either "critical," "important," or "of limited importance," considering the perspectives of patients, families, and ICU staff (**Table 1**) (3).

SEARCH STRATEGY AND STUDY SELECTION

A medical librarian conducted systematic searches of article databases and clinical trial registries from database inception to January 31, 2023; this was subsequently updated to October 8, 2024 (**Supplemental Materials: Search Strategies**, https://links.lww.com/CCM/H791). Search results were uploaded to COVIDENCE (Covidence, Melbourne, VIC, Australia) for screening. Each reference was screened in duplicate by two screeners, and any reference marked by either screener as potentially relevant was advanced for full-text screening. Full-text screening was done in duplicate, with the two methodologists (J.C.R. or S.O.) making a final decision of study eligibility in the event of disagreement between the two screeners (**Supplementary Materials: PRISMA Flow Diagrams**, https://links.lww.com/CCM/H791).

DATA ABSTRACTION, ANALYSIS, AND EVIDENCE SUMMARIES

The methodology team conducted data abstraction using a standardized spreadsheet, assessing risk of bias using the modified Cochrane Risk of Bias tool for randomized controlled trials (RCTs) and the modified CLARITY (a tool that assesses the risk of bias in cohort studies) tool for observational studies (4, 5). Where feasible, meta-analyses of evidence for each PICO question were conducted using RevMan 5.4 (Cochrane's Software for Preparing and Mainting Cochrane Reviews. London, United Kingdom) (4). For dichotomous variables, we reported relative risk and absolute risk difference. For continuous variables, mean difference, or standardized mean difference, as appropriate, each with a corresponding 95% CI. For each outcome for which there was data available, we rated the certainty of evidence as "high," "moderate," "low," or "very low" in accordance with standard GRADE practice (6). We used the highest-certainty evidence available, typically RCTs, if available. Qualitative evidence, or data otherwise not amenable to meta-analysis, was narratively summarized in tables and considered to be of low certainty.

DEVELOPMENT AND VOTING UPON RECOMMENDATIONS

Each working group provided feedback on the evidence summaries and worked through an Evidence-to-Decision (ETD) framework to develop a draft recommendation for each PICO question. The ETDs considered the balance of desirable and undesirable effects, the certainty of evidence, resource implications, equity, feasibility, and acceptability of each intervention. The entire panel voted on each recommendation, its justification, implementation issues, and research

considerations. Following SCCM practice, greater than 80% agreement of 70% of eligible panel voters was considered consensus for a recommendation. We used standard GRADE terminology "we recommend" for strong recommendations and "we suggest" for conditional recommendations. To delineate non-GRADEd good practice statements, we used alternative wording (e.g., "ICU clinicians should...").

RECOMMENDATIONS AND RATIONALES

1.1) We suggest using structured tools to facilitate shared decision-making for EOL treatment decisions in the ICU (Conditional recommendation, moderate certainty evidence).

Remark: While there is no single ideal tool to use, those studied in the ICU setting include communication facilitators; structured meeting plans; and paper-/web-based decision aids.

Shared decision-making is central to patient/person-centered care. Clinician approaches to shared decision-making vary widely, however, as do practices for communicating prognosis and integrating the values and preferences of patients and their families into EOL decision-making. Decision aides and other structured tools are designed to enhance the concordance between the care that patients receive and their values and preferences. A systematic review of 14 RCTs of tools for shared decision-making found evidence that they improve patient and family satisfaction and quality of communication. In addition to enhancing patient-centeredness, the use of such tools may also, in the panel's judgment, help improve equity in EOL decision-making and ICU-based care.

The evidence does not reveal a clear, consistent impact on such key patient outcomes as decisions about treatment and length of stay. It does demonstrate that these tools likely help to reduce anxiety, depression, and other serious mental health symptoms among family members of ICU patients (7, 8). In addition, none of the reviewed studies uncovered any undesirable effects in the use of these tools, which appear to be feasible to implement (but unclearly feasible to sustain). Most of the tools studied were acceptable to patients and families, but their potential to yield possibly distressing information (e.g., about differences in values and preferences) should be acknowledged. Acceptability to clinicians and institutions was unclear because it was not assessed. The resource costs associated with the use of a given tool range from significant (e.g., for a communication facilitator) to low (e.g., a printed decision aid).

The heterogeneity of these structured tools poses the most formidable challenge to their broad-based implementation across different settings. It is likely that they will need to be adapted to reflect their local environments and may require modification and staff education and training. As for directions for future research, we suggest a potential focus on paper- and web-based decision aides: they can be standardized for use across different settings and compared with other tools are of relatively low cost, enhancing the potential for broad-based deployment. Panel member (S.M.) had a conflict of interest with this PICO question and did not vote on it.

1.2a) We suggest ICUs develop resources for educating substitute decision-makers on their role in making decisions on behalf of decisionally incapable patients (Conditional recommendation, low certainty evidence).

1.2b) ICUs should have a standardized process for identifying and documenting the legal surrogate decision-maker for decisionally incapable patients, including for those for whom a surrogate cannot be identified, in accordance with local laws and organizational policy (Good Practice Statement).

Remark: The process for doing this is best done at a hospital/system level and the persons responsible may vary between ICUs but could include the clinical team, social workers, ethics team, legal services, or risk management.

Many ICU patients are decisionally incapable and rely on substitute decision-makers who may not know their goals and preferences to make decisions about EOL care. The primary benefit of having a substitute decision-maker is that patients without them have delayed EOL decisions and prolonged lengths of stay in the ICU (9, 10). While there are usually legal requirements for clinicians/hospitals/healthcare systems to identify the substitute decision-maker, this is not always done consistently, and decision-makers are often unfamiliar with their responsibilities or may not have discussed treatment goals and preferences with the patient (11–13). The panel made a Good Practice Statement on the basis of this indirect evidence.

There is some evidence regarding education and preparation of substitute decision-makers in their role using web- and paper-based tools. Although the certainty of evidence is low due to imprecision from the small size of the studies (14–16), they may improve quality of shared decision-making and communication. Resources required to develop and implement these may vary but are not moderate or large. The panel made a conditional recommendation supporting their use.

Substitute decision-maker education interventions may improve quality of shared decision-making, communication, and family mental health symptoms (post-traumatic stress disorder [PTSD] symptoms, anxiety, and depression symptoms) (17). They may also build trust between the substitute decision-maker and the clinical team (18). Educational interventions may vary depending on the health literacy and cultural appropriateness of the process and materials.

Research priorities include: 1) which approaches to identifying and educating surrogate decision-makers best result in timely EOL life decisions that are consistent with legal requirements and patient preferences and 2) how systematic approaches to educating substitute decision-makers vary between cultural groups and faith traditions where decision-making may not be viewed individualistically, and how this may affect equity.

1.3) We suggest proactive consultation of Palliative Care/Palliative Medicine and/or Ethics Consult Service, when available, to assist with defining goals of care for ICU patients who may no longer benefit from critical care (Conditional recommendation, low certainty evidence).

Intractable conflicts in EOL decision-making can have lingering, adverse effects on ICU patients' families and on members of the clinical team. This conditional recommendation rests on evidence—of low certainty—that the use of supportive services may bring additional, complementary forms of expertise to ICU clinicians, patients, and their families as they navigate the complexities of communication and decision-making at the EOL.

Knowledge gaps and research opportunities are associated with each of these services, some of which have been studied more than others. Most studies have investigated various outcomes of EOL-care interventions by palliative medicine and clinical ethics, but not the full range of outcomes associated with either service; few studies have focused on ICU-based psychology services or pastoral/spiritual care. Thus, there are significant limitations in the evidence undergirding recommendations for this broad range of different services within a context that varies considerably depending upon the patient, their decisional capacity, their overall prognosis, and the unique characteristics of the patient's family and care team. Current evidence indicates that palliative medicine and clinical ethics consults result in a moderate increase in decisions to limit treatments and likely result in a small reduction in both ICU and hospital lengths of stay (19, 20). Evidence additionally points to the small possibility that supportive consultations have an adverse effect on patient care at the EOL; however, the clinical relevance of this remains unclear. For example, the involvement of palliative medicine may reduce family ratings (as reflected in their satisfaction scores) concerning the quality of communication because difficult conversations with consulting services may be distressing to families despite being clinically appropriate. Evidence regarding resources required to establish and sustain these services is of low certainty. It is highly likely that clinicians' respective salary costs vary significantly due to differences in the forms of expertise, training, and continuing education required for daily practice. These services also differ in terms of funding support (e.g., neither clinical ethics consultation nor spiritual care consultation is currently reimbursed). Evidence is unclear whether these services contribute to improvements in health equity. In the panel's judgment, the impact is likely to vary between different clinical settings and patient populations due to variations in both individual and community values.

With respect to future research, we suggest the development of well-designed, controlled studies focused on the outcomes of such under-researched interventions as ICU-based psychology and spiritual care in addressing the often-challenging familial dynamics that can unfold in the context of EOL decision-making. We also suggest research to illuminate the outcomes of moral distress consultation on this occupational hazard of ICU care.

1.4) We suggest implementing institutional policies to address conflicts over futile and potentially inappropriate treatments in the ICU (Conditional recommendation, low certainty evidence).

TABLE 1.
Summary of Recommendations

PICO Question	Recommendation	Strength of Recommendation
1.0. Improving communication about EOL care in the ICU		
1.1. Should we recommend specific interventions to enhance shared decision-making between patients, family members/surrogates, and the clinical team? (clinical team can include ICU, but also other specialty services, such as palliative medicine, surgery, oncology)?	1.1. We suggest using structured tools to facilitate shared decision-making for EOL treatment decisions in the ICU. Remark: While there is no single ideal tool to use, those studied in the ICU setting include communication facilitators; structured meeting plans; and paper/web-based decision aids.	Conditional recommendation, moderate certainty evidence
1.2. Should we recommend specific interventions to ensure procedural due process for substitute decision-making on behalf of decisionally incapable patients?	1.2a. We suggest ICUs develop resources for educating substitute decision-makers on their role in making decisions on behalf of decisionally incapable patients.	Conditional recommendation, low certainty evidence
	1.2b. ICUs should have a standardized process for identifying and documenting the legal surrogate decision-maker for decisionally incapable patients, including those for whom a surrogate cannot be identified, in accordance with local laws and organizational policy. Remark: The process for doing this is best done a hospital/system level and the persons responsible may vary between ICUs but could include the clinical team, social workers, ethics team, legal services, or risk management.	Good practice statement
1.3. Should we recommend consultation with such services as clinical ethics, moral distress, palliative medicine, psychology, and/or pastoral/spiritual care to prevent or mitigate conflicts over treatment decisions at EOL?	1.3. We suggest proactive consultation of Palliative Care/Palliative Medicine and/or Ethics Consult Service, when available, to assist with defining goals of care for ICU patients who may no longer benefit from critical care.	Conditional recommendation, low certainty evidence
1.4. Should we recommend specific institutional policies to reduce futile and potentially inappropriate treatments when there are conflicts during EOL decision-making?	1.4. We suggest implementing institutional policies to address conflicts over futile and potentially inappropriate treatments in the ICU.	Conditional recommendation, low certainty evidence
2.0. Improving provision of EOL care/symptom management for patients in the ICU		
2.1. Should we recommend specific treatments to ensure delivery of effective symptom management for dying ICU patients?	2.1. We suggest using protocolized approaches to withdrawal of life-sustaining treatments and symptom management in the ICU, including assessment and management of symptoms pre-extubation, during weaning, and after extubation.	Conditional recommendation, moderate certainty evidence
2.2. Should we recommend specific interventions to address the cultural, spiritual, and family traditions and needs of patients and families in the ICU at the EOL?	2.2a. ICU clinicians should explore and support patient and family cultural, spiritual, and family traditions at the EOL.	Good practice statement
	2.2b. We suggest using a semi-structured approach to supporting patients and families and addressing spiritual care needs including an introductory meeting, weekly follow-up, and post-hospital discharge follow-up.	Conditional recommendation, low certainty evidence

(*Continued*)

TABLE 1. (*Continued*)
Summary of Recommendations

PICO Question	Recommendation	Strength of Recommendation
2.3. Should we recommend specific interventions such as collaboration with palliative medicine, mental health specialists, spiritual care, or other care process strategies such as care protocols to address, prevent, or mitigate suffering for ICU patients who are at risk of dying in the ICU?	2.3. We suggest consultation and collaboration with an Ethics Consult Service and/or Palliative Medicine, when available, to address the suffering of ICU patients and families at the EOL, when there are challenges in mitigating conflicts, distress, or suffering.	Conditional recommendation, low certainty evidence
3.0. Addressing educational needs of clinicians, patients, families, and surrogate decision-makers in ICU EOL care		
3.1. Should we recommend strategies and policies to identify, prevent, and mitigate inequities based upon gender, gender identity, sexual orientation, race, ethnicity, faith traditions, country of origin, or socioeconomic status at the EOL?	3.1a. We have insufficient evidence to recommend for or against specific interventions to identify and reduce unmet palliative care needs of specific populations receiving EOL care in the ICU.	No recommendation, low certainty evidence
	3.1b. ICU clinicians providing EOL care should explore and address patient palliative care needs, considering a patient's gender, gender identity, sexual identity, race, ethnicity, faith traditions, country of origin, primary language, and socioeconomic status.	Good practice statement
3.2. Should we recommend specific interventions or strategies, such as palliative care education, to increase the capability of ICU team members to deliver high-quality EOL care in the ICU?	3.2. We suggest providing education and training in palliative care for all ICU team members to improve the capability of providing EOL care in the ICU.	Conditional recommendation, very low certainty evidence
3.3. Should we recommend specific interventions or strategies, such as education efforts, to improve the understanding and expectations of patients at risk of ICU admission, their families, and non-ICU clinicians about EOL care in the ICU?	3.3. We suggest clinicians provide educational interventions to patients/families/surrogates at risk of ICU admission to improve their understanding of ICU and EOL treatment options, realistic treatment outcomes, and advance care planning.	Conditional recommendation, low certainty evidence

EOL = end of life.

Conflicts during EOL decision-making in the ICU can lead to potentially inappropriate treatment, increase suffering for patients and families, disrupt communication between and among patients, families, and treatment teams, and distress clinicians.

There is limited evidence regarding institutional policies to reduce potentially inappropriate treatment (21, 22). There is low certainty evidence that such policies reduce the number of treatments provided to patients without affecting mortality (23). Policies can support clinical teams and have the potential to reduce burnout and moral distress, although evidence on this is lacking. Clinicians likely value having institutional support for withholding or withdrawing treatments that they doubt will be beneficial. Having a policy may reassure clinicians that they are adhering to local medico-legal requirements and best practices for EOL care.

A policy may improve equity by ensuring that treatment decisions are guided by a framework that can be applied fairly to all patients. Policies can promote due process and therefore increase equity (i.e., similar patients are more likely to receive similar care in accordance with policies) (23–25). Due process elements and procedural safeguards such as criteria for use, incorporating patient/family member perspectives, second medical opinions, ethics consultation, and institutional review and oversight are important to ensure that such policies are used consistently and applied fairly. They may also hold individual clinicians and institutions accountable for providing equitable

care by delineating clear standards for decision-making and which interventions should or should not be provided.

Policies to reduce potentially inappropriate treatments should be consistent with medico-legal requirements in the institution's jurisdiction. Limited data on time-limited trials of ICU care show the potential to improve clinician/family meetings and decrease the intensity and duration of ICU treatment (23).

Many hospitals have such policies in place, demonstrating that they are feasible across a variety of policy contexts. More research on the effects of institutional policies is required to understand cost-effectiveness, impact on patient and family satisfaction, clinician burnout, and moral distress.

2.1) We suggest using protocolized approaches to withdrawal of life-sustaining treatments and symptom management in the ICU, including assessment and management of symptoms pre-extubation, during weaning, and after extubation (Conditional recommendation, moderate certainty evidence).

Transitioning from ICU level of care to comfort-focused care entails withdrawing life-sustaining treatment (WLST), including mechanical ventilation, and the effective, compassionate management of diverse symptoms experienced by the ICU patient. Campbell and Yarandi (26) prospectively examined the use of an algorithmic approach to ICU WLST vs. usual care processes in a cluster RCT. Moderate certainty evidence was found in favor of the protocol for respiratory distress symptoms, duration of survival after WLST, and opioid and benzodiazepine doses. This study was limited by imprecision due to a small sample size (n = 48 in protocol, n = 120 in usual care).

A total of three observational studies of very low to low certainty examined direct extubation vs. terminal weaning (27–29). Direct extubation may result in reduced duration of survival after WLST, lower doses of pharmaceutical agents used, and lower clinician job strain scores. There was very low certainty evidence that terminal weaning may improve symptom management scores and very low certainty evidence of impact on family psychologic health measures.

Current evidence supports a protocolized approach to WLST in the ICU to improve symptom management for patients. Using a protocol does not appear to prolong the dying process and uses less medication overall. Evidence is currently lacking to identify a superior method for extubation; either may be used alongside a protocolized approach similar to that studied by Campbell and Yarandi (26). Special subgroups, such as left ventricular assist device or extracorporeal membrane oxygenation patients, may not fit well into general protocols for WLST. The extubation process should be informed by case-specific factors. No cost data was available to compare protocolized WLST to usual care, or direct extubation to terminal weaning, but given the reduced doses of pharmaceuticals and a trend to shorter time to death post WSLT, we suspect that protocols are cost effective. No evidence exists to favor one pharmaceutical agent within a medication class over others in the same class. Variation in medication choices likely represents regional or system differences of unclear origins.

2.2a) ICU clinicians should explore and support patient and family cultural, spiritual, and family traditions at the EOL (Good Practice Statement).

Variation in patient/family beliefs, values, goals and prioritization attached to competing goals at the EOL, such as consciousness vs. adequate control of pain, may require modification of protocols to meet the needs of individual situations. It is extremely important that ICU clinicians know about, understand, and work to support patient-specific values, beliefs, goals, and prioritization of goals in the context of EOL care. Following GRADE guidance, the panel made a Good Practice Statement regarding patient/family expectations that cultural, spiritual, and family traditions should be known, respected, and incorporated into the care plan by the healthcare team delivering EOL care in the ICU. SCCM Guidelines on Family-Centered Care may be useful in achieving these aims (30).

2.2b) We suggest using a semi-structured approach to supporting patients and families and addressing spiritual care needs including an introductory meeting, weekly follow-up, and post-hospital discharge follow-up (Conditional recommendation, low quality evidence).

Torke et al (31) examined the effects of a spiritual care intervention on the well-being of ICU family surrogates in a small RCT and found that a semi-structured approach may improve family/surrogate symptoms of anxiety, spiritual well-being, and family satisfaction with care for those who chose to participate. There was no evidence of undesirable effects in the study. Feasibility is unclear, but many, if not most,

ICUs have access to spiritual care providers through some current mechanism within their healthcare system. Cost implications are unclear. Spiritual care is a health system cost center and does not bill for revenue. However, this study provides evidence of the beneficial impact of spiritual care services to patients' families and surrogates. Other limitations of the study included a focus on spiritual and religious needs but not cultural needs, low representation of faith traditions other than Christianity, and low representation of Asian and Latino participants.

Research is needed to identify optimal spiritual care delivery using structured/semi-structured approaches in the care of ICU patients at the EOL and their families. Research is also needed to identify culturally associated care needs as a separate domain from spiritual care needs.

2.3) We suggest consultation and collaboration with an Ethics Consult Service and/or Palliative Medicine, when available, to address the suffering of ICU patients and families at the EOL, when there are challenges in mitigating conflicts, distress, or suffering (Conditional recommendation, low certainty evidence).

A multidisciplinary, collaborative approach is essential to comprehensively address the suffering of ICU patients at risk of dying and mitigate physical, psychologic, and existential burdens (32). Communication between patients, families, and medical teams can often be inadequate (33). Multidisciplinary collaboration optimizes care, ensures symptom relief, and supports goal-concordant care delivery. Palliative care teams are particularly adept at navigating complex discussions about prognosis and treatment options and aligning interventions with patient preferences, especially for those nearing the EOL (34, 35). Evidence shows that early integration of palliative care in the ICU improves symptom management, reduces length of stay, and facilitates transitions to appropriate care levels, including hospice (36).

Collaboration with mental health professionals addresses psychologic suffering, such as anxiety, depression, and PTSD, that can exacerbate physical symptoms. Spiritual care professionals help patients and families navigate existential distress and find meaning amid critical illness (37). Implementing standardized care protocols and pathways ensures consistent approaches to symptom management, family communication, and decision-making, fostering a patient-centered environment and supporting clinical staff (34, 38). Integrating mental health support can improve decision-making and overall well-being, while spiritual care enhances coping mechanisms and provides comfort during EOL decision-making (35).

Although it may result in improved satisfaction with care (39), the panel found low certainty evidence for the effects of palliative care consultation for symptom management in the ICU due to the small number and size of included trials (40). A single RCT, larger than the two palliative care trials (31), evaluated spiritual care consultation in the ICU. Limited evidence suggests that palliative care and spiritual care consultation may improve family outcomes, including satisfaction with care and mental health symptoms. There is a small amount of data on psychologist consultation, and substantial uncertainty around the costs and feasibility of these interventions, although the panel agreed they appear helpful. Current limited evidence presents crucial opportunities for expanded research.

3.1a) We have insufficient evidence to recommend for or against specific interventions to identify and reduce unmet palliative care needs of specific populations in EOL care in the ICU (No recommendation, low certainty evidence).

3.1b) ICU clinicians providing EOL care should explore and address patient palliative care needs, considering a patient's gender, gender identity, sexual identity, race, ethnicity, faith traditions, country of origin, primary language, and socioeconomic status (Good Practice Statement).

Identifying and meeting the needs of a diverse population of ICU patients at the EOL is a key component of excellent patient- and family-centered ICU care. Low certainty evidence exists that patient-specific demographic factors influence the experience of EOL care in the ICU in varying desired and undesired ways, including death rates in the ICU, decisions to limit treatment, use of hospice services preceding death, effective symptom management, delivery of goal-concordant care, and quality of death and dying scores (41–46). Following GRADE guidelines, the panel made a Good Practice Statement recommending that clinicians providing EOL care explore and address unmet palliative care needs.

Cox et al (46) studied the use of a mobile application-based communication facilitation platform for family

members of ICU patients that is designed to reduce inequities in unmet palliative care needs, especially for Black families. This small RCT found a possible larger benefit to White families compared with Black families in identifying unmet palliative care needs. The study was limited by a small sample size and the reasons why White families may have had greater benefit are unclear. Davila et al (47) found that use of a dedicated palliative care team for Spanish-speaking ICU patients during the Covid-19 pandemic may provide an opportunity for earlier palliative care consultation. Patel et al (48) found that a culturally adaptive palliative care consultation for Hispanic patients using the Spikes model was associated with a higher rate of conversion of patients' code status to do not resuscitate than without the culturally adaptive consultation.

More research is needed on how to best identify and optimally meet the EOL-care needs of ICU patients/families from communities historically subjected to bias in healthcare delivery. Members of at-risk communities must be included in study inception and design. Research teams should partner with these communities instead of doing research "to" or "for" them. The effects of a diverse healthcare team on how EOL care is experienced by at-risk patients/communities requires study. Incorporation of social science methods frequently missing in current research of the unmet palliative care and EOL needs of historically underserved populations in the ICU at the EOL should be investigated.

3.2) We suggest providing education and training in palliative care for all ICU team members to improve the capability of providing EOL care in the ICU (Conditional recommendation, very low certainty evidence).

The incorporation of palliative care practices in the ICU is endorsed by the 2018 National Consensus Project (NCP) Clinical Practice Guidelines for Quality Palliative Care, the ACCM, the Improving Palliative Care in the ICU project, and the European Society of Intensive Care Medicine (35, 49–51). Emphasis is placed on the importance of improving quality of life, reducing futile and potentially inappropriate interventions, improving communication, and assisting families during challenging decision-making processes. Domain 7 of the 2018 NCP guidelines specifically emphasizes the capacity of interdisciplinary teams to optimize EOL care quality: "Clinicians can improve patient care by learning how to assess and manage physical symptoms common among patients nearing the EOL. All clinicians must have the knowledge and skills to talk to patients and families about dying" (35). These guidelines are a blueprint for healthcare team education.

Evidence in non-ICU patient populations suggests palliative care improves quality of life, reduces symptom distress, drives higher satisfaction and positive patient experiences, and reduces readmission and costs (52–54). Variations in the quality of ICU primary palliative care and readiness to engage in specialty palliative care services significantly influence the use of aggressive interventions near the EOL. These challenges can affect decision-making processes, symptom management, and care alignment with patients' goals, resulting in variability in treatment intensity during EOL care (50, 55). The use of specialty palliative care consultation varies by provider and unit culture (56) and is hindered by a lack of consensus on quality palliative care metrics (57). Access to consultative palliative care is uneven and is influenced by geographical factors, organizational mission, and/or leadership (58).

Educating ICU team members in primary palliative care knowledge and skills is essential for integrating primary palliative care into the ICU, improving care quality for critically ill patients by addressing both curative and palliative needs, and facilitating timely recognition of when palliative care consultation is appropriate to optimize patient-centered care. However, educational interventions for ICU teams have yielded mixed results to date. A quality improvement education intervention in the ICU resulted in a reduction in ICU length of stay but no impact on patient- or family-centered outcomes (59). EOL ICU nursing education strengthened knowledge of pain and disease symptom management, and improved mindset, practical application and clinical confidence for ICU nurses caring for patients nearing death (60). Communication training for ICU teams provided by palliative care certified experts yielded a significant reduction in implementation of renal replacement therapy in patients with poor prognosis (61). Educational interventions to improve ICU team member communication skills using interactive educational methodologies resulted in improved comfort in communication skills among ICU physicians and nurses (60, 62, 63) The variability in resources and feasibility of educational efforts across

centers suggests that localized but mixed modality formats are likely to be most effective to improve communication skills.

Future research in ICU EOL care education is needed to better understand which educational interventions and methodologies will be effective with impact on improving staff self-efficacy in palliative care, the economics of EOL care, and patient- and family-centered outcomes at the EOL in the ICU.

3.3) We suggest clinicians provide educational interventions to patients/families/surrogates at risk of ICU admission to improve their understanding of ICU and EOL treatment options, realistic treatment outcomes, and advance care planning (Conditional recommendation, low certainty evidence).

Patients with serious acute or chronic illness are at risk of ICU admission, which may or may not be congruent with their values and preferences for care (64). Interventions to educate and assist with decision-making in the inpatient setting, before ICU care is needed, may help to limit unwanted treatments in the ICU and allow more effective symptom palliation at the EOL (65–68).

We identified 15 RCTs evaluating a variety of educational interventions (paper, video). These likely improve patient knowledge scores, may reduce decisional conflict, and result in more decisions to withhold or withdraw treatments. This supports the concept that, in many cases, informed patients are likely to want to forgo ICU interventions (69–72). Other data show no increase in decisions to forgo cardiopulmonary resuscitation (CPR) (73), but less conflict regarding treatment options (74), or smaller effects upon decisional conflict or knowledge (75). One study demonstrated benefit for documented goals of care conversations in racialized and ethnically minoritized populations (76). Interventions should be tailored to the population: accessible, understandable, and relevant (e.g., language, culture, visual/auditory materials) in order to be equitable and efficacious.

The primary uncertainty is about resources and their impact, which are expected to vary with the type of intervention. Patients and families who are struggling with decision-making and having discussions about EOL care may decline education, but it should be provided in other instances.

There are few data on costs to health systems to provide these materials/services to decision-makers. The intervention itself may have varied costs depending on the implementation approach (e.g., staff costs vs. costs to develop and provide decision aids). Avoiding unwanted treatments (ICU admission, CPR, intubation) may, in fact, be cost saving and reduce staff moral distress and burnout. Such data may also be important for patients and families who are financial stakeholders in care. Additional research is needed on costs and cost effectiveness, as well as on the evolving literature on gamification techniques as an educational tool in EOL care planning (77–79).

ACKNOWLEDGMENTS

We thank Karin Dearness for developing the electronic search strategies and Rachel Couban (McMaster University, Hamilton, ON, Canada) for peer review of electronic search strategies. Also, we thank Henry Ajzenberg and Gazal Haddad for their work on the literature searches, data abstraction, and analysis.

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Supplemental digital content is available for this article. Direct URL citations appear in the printed text and are provided in the HTML and PDF versions of this article on the journal's website (http://journals.lww.com/ccmjournal).

Funding of these guidelines was provided solely by the Society of Critical Care Medicine.

Conflicts of interest on the part of individual panel members were identified and managed throughout the panel process; disclosures were sought at the outset of each meeting. Dr. Muehlschlegel was excluded from voting on one recommendation due to the possession of research funding related to recommendation content. Dr. Muehlschlegel was a consultant for Acasti Pharma. Dr. Muehlschlegel also received grant funding from the National Institutes of Health/National Institute of Nursing Research (R21NR020231 and Johns Hopkins University Department of Anesthesiology/Critical Care Medicine through the Stimulating and Advancing ASCM Research (StAAR) Investigator Award. Dr. Martin was a consultant and advisor for Astra Zeneca, Nestle, and FloBio, LLC. Dr. John is a government employee working at a Veteran Affairs hospital. Dr. Wescoe Singley holds a corporate membership for Boehringer Ingelheim. The remaining authors have disclosed that they do not have any potential conflicts of interest.

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